

Connecting Power BI and Looker Studio to a Website: Research Document

1. Introduction

This document outlines the methods to connect Power BI and Looker Studio (formerly Google Data Studio) to a website. It provides practical steps for embedding dashboards and visualizations and includes necessary prerequisites, security considerations, and recommendations.

2. Connecting Power BI to a Website

2.1 Embedding Options

- Publish to Web (Public): Generate an iframe HTML embed code. Easily embed visualizations on any website. Not secure: Anyone with the link can view the report.
- Secure Embed (for internal applications): Requires Azure AD authentication. Use Power BI REST API or JavaScript SDK. Recommended for internal or secured use.

2.2 Steps to Use "Publish to Web"

1. Open the report in Power BI Service.
2. Click "File" > "Publish to Web".
3. Copy the iframe embed code.
4. Paste the code into the website's HTML.

2.3 Steps to Use Secure Embed

1. Register your web app in Azure Active Directory.
2. Assign permissions for Power BI API.
3. Use `powerbi-client` JavaScript SDK to embed securely.
4. Implement token authentication.

2.4 Code Snippet Example (Secure Embed)

```
<div id="reportContainer"></div>
<script src="https://cdn.powerbi.com/libs/powerbi-
client/2.19.0/powerbi.min.js"></script>
<script>
  var embedConfig = {
    type: 'report',
    tokenType: models.TokenType.Embed,
    accessToken: '<EMBED_TOKEN>',
    embedUrl: '<EMBED_URL>',
    id: '<REPORT_ID>',
    permissions: models.Permissions.All,
    settings: {
      filterPaneEnabled: false,
      navContentPaneEnabled: true
    }
  };
  var reportContainer = document.getElementById('reportContainer');
  powerbi.embed(reportContainer, embedConfig);
</script>
```

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3. Connecting Looker Studio to a Website

3.1 Embedding Options

Looker Studio allows you to embed reports using an iframe. Secure viewing can be managed through Google account access restrictions.

3.2 Steps to Embed

1. Open the report in Looker Studio.
2. Click "Share" > "Embed Report".
3. Enable "Enable Embedding".
4. Copy the iframe code.
5. Insert the iframe into your web page HTML.

3.3 Authentication and Security

Set report sharing to restricted or specific users. Users must be logged into an authorized Google account to view.

3.4 Sample Embed Code

```
<iframe width="600" height="400"  
src="https://lookerstudio.google.com/embed/reporting/<REPORT_I  
D>/page/<PAGE_ID>" frameborder="0" style="border:0"  
allowfullscreen></iframe>
```

```
<iframe width="600" height="400" src="https://lookerstudio.google.com/embed/reporting/<REPORT_ID>/page/<PAGE_ID>" frameborder="0" style="border:0" allowfullscreen></ifram
```

4. Comparison Table

| Feature | Power BI (Publish to Web) | Power BI (Secure Embed) | Looker Studio Embed |
|----------------|---------------------------|-------------------------|---------------------|
| Authentication | None | Azure AD (OAuth) | Google Account |
| Embed Format | iframe | JavaScript SDK + token | iframe |
| Interactivity | Yes | Yes | Yes |
| Security Level | Low | High | Medium |

5. Recommendations

- Use Secure Embed or Looker Studio with Google auth for sensitive data.
- Use Publish to Web only for public, non-confidential data.
- Regularly monitor access permissions and tokens.
- Ensure web hosting platform allows embedding third-party content.

6. References

- Microsoft Docs: Power BI Embedding Overview
- Google Docs: Looker Studio Embedding Guide
- OAuth 2.0 and Azure Active Directory Documentation